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GLOBAL WARMING DUE TO GREENHOUSE GAS EMISSIONS: THE SUCCESS OF STATE SOLUTIONS AS A MODEL FOR A FEDERAL SOLUTION

Neil Keenan *

Due to a flurry of sub-national programs designed to curb global warming and some high profile global warming headlines in the popular media—i.e. *Massachusetts v. EPA* and Al Gore's *An Inconvenient Truth*—the cry for over-arching federal global warming legislation has grown increasingly loud. However, though such legislation has been proposed, none has been passed into law to date.¹ If Congress does decide to pass federal global warming legislation, how should the legislation be drafted?

To answer this question, one must first understand and analyze the existing global warming laws and programs in place. Though there are many successful global warming initiatives in place throughout the world, this Note will focus on those already in place in the individual states of the United States to limit greenhouse gas emissions. While this cross-section of global warming programs in America covers many of the largest and most comprehensive programs, many local communities and cities have taken action on their own, independent of their state.² In addition to measures trying to limit greenhouse gas emissions, there is a large amount of regulation of energy sources and energy use in states that is geared towards stemming climate change.³ Though these other actions will not be addressed in this Note, they should not be discounted as unimportant or ineffective. Rather, in the interest of engaging in a detailed discussion about existing global warming initiatives, an analysis of programs implemented by states with regards to greenhouse gases ("GHG") makes the most sense, since states are

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1. See, e.g., NATURAL RESOURCE DEFENSE COUNCIL, SOLVING GLOBAL WARMING: YOUR GUIDE TO LEGISLATION (2008), http://www.nrdc.org/legislation/factsheets/leg_07032601A.pdf (discussing some of the proposed legislation before the 110th Congress).

2. See Sierra Club, CoolCities, <http://coolcities.us/> (last visited Jan. 19, 2008) (providing a list of all "local governments [that] are moving forward with innovative energy solutions that curb global warming"); Mayors Climate Protection Center, U.S. Conference of Mayors Climate Protection Agreement, <http://usmayors.org/climateprotection/agreement.htm> (last visited Jan. 19, 2008) (providing an overview of the agreement, whereby the mayors agree to "[s]trive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns; [u]rge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol—7% reduction from 1990 levels by 2012; and [u]rge the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system"); Seattle.gov, US Mayors Climate Protection Agreement, <http://www.seattle.gov/mayor/climate/> (last visited Jan. 19, 2008) (stating that there are over 710 signatories to the US Mayors Climate Protection Agreement).

3. See Pew Center on Global Climate Change, State Action Maps, http://www.pewclimate.org/what_s_being_done/in_the_states/state_action_maps.cfm (last visited Jan. 19, 2008) (providing links to maps that shows which states have taken steps to regulate energy production and use in their states as well as explanations of said programs).

the highest level of American government that has thus far taken direct action to combat global warming.

This Note contends that the global warming initiatives in place at the state level could, if expanded, be successful in stemming climate change. States, as Justice Brandeis famously said, are able to serve as laboratories to experiment with new and innovative ideas without risking the entire country if the idea fails.⁴ To date, thirty-six states have developed, or are in the process of developing, a Climate Action Plan “which detail[s] steps that the states can take to reduce their contribution to climate change.”⁵ As we will explore, different states have taken various steps to curtail climate change, and each state’s actions show varying amounts of promise for success. Part I of this paper briefly outlines a history of federal global warming law (or lack thereof) in America. Part II will explore the different actions taken by the states with regards to GHG: state GHG emissions targets, vehicle GHG emissions standards, lawsuits by states against the federal government, Climate Action Plans, and regional efforts by groups of states. Part III will discuss the prospects for success of many of the state programs (since they are all relatively new programs with limited data available to show concrete success or failure,) before concluding by looking forward to possible federal global warming legislation that borrows heavily from many of the promising state programs.

I. BRIEF HISTORY OF FEDERAL GLOBAL WARMING LAWS

Prior to the 1970s, environmental protection law in the United States was largely nonexistent.⁶ There were some state regulations for clean water and clean air in place, but nothing on the federal level.⁷ Many environmental concerns were dealt with in court using tort and property law, specifically nuisance law.⁸ However, the 1970s witnessed a tremendous boom in federal environmental law, including the creation of a federal Environmental Protection Agency (“EPA”).⁹ This flurry of federal environmental laws included the National Climate Program Act of 1978, which established a program to study the effects of climate to understand climate processes.¹⁰ By 1987, due to increasing concern about climate change due to GHG emissions, Congress passed the Global Climate Protection Act of 1987, directing the National

4. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

5. Pew Center on Global Climate Change, *States with Climate Action Plans*, http://www.pewclimate.org/what_s_being_done/in_the_states/action_plan_map.cfm (last visited Jan. 19, 2008) [hereinafter *States with Climate Action Plans*].

6. Richard J. Lazarus, *The Greening of America and the Graying of United States Environmental Law: Reflections on Environmental Law's First Three Decades in the United States*, 20 VA. ENVTL. L.J. 75, 76 (2001).

7. Alexandra B. Klass, *Common Law and Federalism in the Age of the Regulatory State*, 92 IOWA L. REV. 545, 567 (2007).

8. Lazarus, *supra* note 6, at 76.

9. Klass, *supra* note 7, at 567.

10. Robert B. McKinstry, Jr., Esq., *Laboratories for Local Solutions for Global Problems: State, Local, and Private Leadership in Developing Private Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15, 20 (2004) (citing National Climate Program Act, Pub. L. No. 95-367, 92 Stat. 601 (1978), amended by Global Climate Protection Act of 1987, Pub. L. No. 100-204, 101 Stat. 1407 (1987) (codified at 15 U.S.C. §§ 2901–2908 (2003))).

Climate Program to research climate change.¹¹ The congressional findings included evidence that “manmade pollution” may be producing long term and substantial increase in temperatures, ultimately suggesting that only a global program with “United States leadership” would be able to address the problem.¹² In response, Congress called for research into methods to control GHG emissions and possible cooperation in international efforts to control climate change.¹³ Shortly thereafter, Congress passed the Global Change Research Act of 1990, calling for the creation of national and international research programs into the causes and effects of climate change, alternative energy, and energy efficiency, as well as the submission of annual reports to Congress and a quadrennial scientific assessment.¹⁴ In 1993, the United States adopted the Climate Change Action Plan and the “Climate-Wise” program (developed by the EPA) to encourage voluntary reductions in GHG emissions.¹⁵

The United States also took action against climate change on the international stage. In 1992, the United States joined many other nations in endorsing the United Nations Framework Convention on Climate Change, ultimately signing and ratifying the Framework Convention in 1992.¹⁶ The Framework Convention’s primary objective is to stabilize GHG at levels that will prevent “dangerous anthropomorphic interference with the climate system.”¹⁷ However, the Convention does not set any specific emissions targets for any signatory, but instead only states an “aim” to return GHG emissions to 1990 levels.¹⁸ In 1997, the parties to the Convention created the Kyoto Protocol in order to try to accomplish the aims of the Convention.¹⁹ The Protocol would require the United States to lower its GHG emissions to ninety-three percent of its 1990 GHG emissions levels by 2012.²⁰ In an attempt to help nations meet their required emissions targets, the Protocol lists several possible measures that could be taken, including:

- (1) enhancement of energy efficiency, (2) implementation of measures to limit or reduce gas emissions from transportation sector, (3) promotion of sinks and reservoirs, (4) promotion of sustainable agriculture, (5) control of methane emissions, (6) removing market imperfections, taxes and subsidies encouraging greenhouse gas emissions and energy inefficiency, and (7) “[e]ncouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases,” presumably including express limitations and

11. *Id.* (citing Global Climate Protection Act).

12. *Id.* at 20–21 (citing Global Climate Protection Act § 1102).

13. *Id.* at 21 (citing Global Climate Protection Act § 1103).

14. *Id.* (citing Global Change Research Act of 1990, Pub. L. 101-606, 104 Stat. 3096 (codified at 15 U.S.C. §§ 2921–2961 (1990))).

15. McKinstry, *supra* note 10, at 23.

16. *Id.* at 17.

17. *Id.* (citing United Nations Framework Convention on Climate Change art. 2, May 29, 1992, S. TREATY DOC. NO. 102-38, 1771 U.N.T.S. 107 [hereinafter Framework Convention]).

18. *Id.* at 19 (citing Framework Convention, *supra* note 17, art. 4, § 2(b)).

19. *Id.*

20. McKinstry, *supra* note 10, at 19 (quoting Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3 § 1, Dec. 10, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol]).

caps.²¹

The Protocol also allows for trading among the member parties, so that countries who more than meet their requirements can sell their excess rights to pollute to another country.²² President Clinton signed the Kyoto Protocol in 1998, but it was never presented to the Senate to be ratified.²³ Consequently, the United States' failure to join the Protocol has rendered the Protocol ineffective internationally as the community of nations awaits either United States or Russian ratification.²⁴

While the federal government of the United States has taken an interest in climate change, it has done nothing substantive to combat it. While much legislation has been proposed, the federal government to date has only passed legislation that supports research on climate change and proposes voluntary reductions in GHG emissions. While setting nice goals, realistically voluntary legislation will have a minimal effect at best, as most companies will not willingly incur extra costs to revise their production methods so as to meet the GHG emissions levels that are recommended. On the international level, the United States has done anything but take the lead in trying to curtail climate change. Besides failing to join the Kyoto Protocol and leaving it in international limbo, the United States has also managed to fail to meet the aims of the Framework Convention. In fact, in 2001 the United States' GHG emissions levels were thirteen percent higher than their levels in 1990.²⁵ With the federal government dragging its feet, it seemed that America would allow GHG emissions to go unchecked.

II. MODERN GLOBAL WARMING STATE ACTIONS

In the 1990s, states took action to fill the void left by the federal government's inactivity in regulating climate change. In anticipation of United States participation in the Kyoto Protocol, a number of states developed climate policy actions and GHG inventories.²⁶ These plans tended to be far from comprehensive and were often not fully implemented.²⁷ Since 2000, however, states have undertaken much more serious efforts at crafting legislation, plans, and other measures to combat global warming by limiting GHG emissions. While this Note will not cover every modern state initiative, many of them will be more fully explored *infra*. First, though, an overview on how state GHG actions are designed generally is useful and necessary.

21. *Id.* at 20 (citing Kyoto Protocol art. 2, § 1(a)).

22. *Id.* (citing Kyoto Protocol art. 17).

23. Matthew Visick, Note, *If Not Now, When? The California Global Warming Solutions Act of 2006: California's Final Steps Towards Comprehensive Mandatory Greenhouse Gas Regulation*, 13 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 249, 251 (2007).

24. McKinstry, *supra* note 10, at 19 n.25.

25. *Id.* at 25.

26. Thomas D. Peterson, *The Evolution of State Climate Change Policy in the United States: Lessons Learned and New Directions*, 14 WIDENER L.J. 81, 91 (2004).

27. *Id.* at 91-92. See also, e.g., N.H. REV. STAT. ANN. § 125-L:2 (1999) (promoting voluntary reduction of GHG emissions by encouraging registration of GHG emissions).

A. The Design of State GHG Actions

Like most political activity, climate change policy usually only arises after constituents call for it. In order to be made known, the constituents must come together and clearly present their goals and plan, including the “[r]oles and responsibilities for parties, including stakeholders, the state, the public, facilitators, and technical consultants.”²⁸ Their plan is often bolstered with scientific data regarding current GHG emissions and forecasts as to their levels in the future.²⁹ When the public is sufficiently mobilized and organized behind a policy idea regarding climate change, usually only then will the state government take action. Climate policy actions often involve diverse constituencies that are embroiled in conflict. For example, environmentalists passionate about combating climate change may be set against corporations passionate about trying to prevent new regulations that will increase their costs. Consequently, people often do not invest the necessary amount of time, energy, or money into an action at the state level that does not have the governor’s attention and support—often an important ingredient if an initiative is to sufficiently explore the issue and be properly implemented.³⁰ Nevertheless, even with the governor’s support, some actions that seek to attack GHG emissions may fail due to problems with cost effectiveness, political acceptability, and feasibility.³¹ While it is difficult to find many similarities in the different global warming actions states have undertaken, many states have set Kyoto-esque goals of establishing 1990-level GHG emissions levels (or less) by 2008–2012.³² These statewide programs with targets and timetables require ongoing monitoring of progress towards their goals; this monitoring also provides feedback for program alterations.³³ Having given a brief overview of the creation of state climate change policy, an exploration of these policies is now appropriate.

28. Peterson, *supra* note 26, at 101.

29. *Id.*

30. *Id.* at 98.

31. *Id.* at 104.

32. *Id.* at 107. Professor Adam Rose identified several different ways to limit GHG, arranged from lowest to highest cost:

(a) Conservation, including technological improvements and behavioral measures. These have even been found to more than pay for themselves. (b) Fossil fuel substitution. Natural gas generates only slightly over half as much carbon dioxide as does coal per BTU. Some dual-fired boilers exist, but generally this requires substitution or some adjustment of technology. (c) Non-fossil fuel substitution. This entails replacement of activities fueled by coal-oil, or gas by renewables, such as wind, solar, and geothermal. It also, however, provides an entrée for nuclear power, though tradeoffs in potential environmental damage must be assessed. (d) Technology substitution. This entails replacement of an entire production process by one that emits fewer GHGs. The capital cost may be sizeable, but it is not unusual to find examples where the life-cycle costs represent a net savings. (e) End-of-pipe treatment. In this case, the predominant alternative is “industrial carbon management,” which calls for removing carbon from combustion exhaust gases and sequestering it in depleted oil/gas wells or in the deep oceans. (f) Geo-engineering. This refers to alternatives such as cloud ionization, which also might have unknown or potentially catastrophic side effects. (g) Biological sequestration. This refers to slowing down the cutting of trees and/or planting new forests.

Adam Rose, *Greenhouse Gas Mitigation Action Planning: An Overview*, 12 PENN ST. ENVTL. L. REV. 153, 159 (2004).

33. Peterson, *supra* note 26, at 107.

B. State GHG Emissions Targets

A number of states have set their own statewide targets for GHG emission reductions in the future. Some states have set similar reductions as part of regional compacts entered into by a number of states, but those will be addressed in a later section. The first state to set its own reduction target was New York, in its 2002 State Energy Plan and Final Environmental Impact Statement ("Energy Plan") that "encompasses policies designed to keep New York at the forefront among the states in providing its citizens with fairly priced, clean, and efficient energy resources."³⁴ While the Energy Plan laid out many goals, it clearly established GHG emission goals of five percent below 1990 levels by 2010 and ten percent below 1990 levels by 2020.³⁵

In 2003, Maine became the next state to enact legislation establishing GHG emission reduction targets. Though the targets were similar to standards set in The Climate Change Action Plan developed by The Conference of New England Governors and the Eastern Canadian Premiers, to which Maine had already agreed,³⁶ Maine took the significant step of actually incorporating these targets as law. As set forth in the statute, Maine declared reduction goals of reaching 1990 levels by 2010, ten percent below 1990 levels by 2020, and seventy-five to eighty percent below 1990 levels "may be required" in the long-term.³⁷ Connecticut adopted the same goals in 2004.³⁸

On June 1, 2005, California Governor Arnold Schwarzenegger issued an Executive Order proclaiming statewide GHG emission reduction targets of 2000 levels by 2010, 1990 levels by 2020, and eighty percent below 1990 levels by 2050.³⁹ Just days later, on June 9, 2005, New Mexico Governor Bill Richardson issued an Executive Order setting up similar targets: 2000 emission levels by 2012, ten percent below 2000 levels by 2020, and seventy-five percent below 2000 emission levels by 2050.⁴⁰ Arizona Governor Janet Napolitano followed suit on September 8, 2006, issuing an Executive Order that created statewide GHG emission targets of 2000 levels by 2020, and fifty percent below 2000 levels by 2040.⁴¹ On September 26, 2006, Governor Schwarzenegger took further action against global warming, signing the Global Warming Solutions Act of 2006, which called for the reduction of GHG emissions levels to that of 1990 by 2020, to be enforced by rules forthcoming.⁴² In 2007, a flurry of states established GHG emission reduction levels. Illinois and Florida created theirs

34. N.Y. STATE ENERGY RESEARCH AND DEV. AUTH., 2002 STATE ENERGY PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT, *available at* http://www.nyserda.org/Energy_Information/energy_state_plan.asp.

35. *Id.* § S, at 3.

36. Pew Center on Global Climate Change, States with Greenhouse Gas Emissions Targets, http://www.pewclimate.org/what_s_being_done/in_the_states/emissionstargets_map.cfm (last visited Jan. 19 2008) [hereinafter States with GHG Targets].

37. ME. REV. STAT. ANN. tit. 38, § 576 (2003).

38. See CONN. GEN. STAT. ANN. § 22a-200a (a) (West 2004).

39. Cal. Exec. Order S-3-05 (2005), <http://gov.ca.gov/executive-order/1861/>.

40. N.M. Exec. Order 2005-033 (2005), http://www.governor.state.nm.us/orders/2005/EO_2005_033.pdf.

41. Ariz. Exec. Order 2006-13 (2006), http://azgovernor.gov/dms/upload/EO_200613_90806_.pdf.

42. CAL. HEALTH & SAFETY CODE § 38530(a) (West 2006) ("On or before January 1, 2008, the state board shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program.").

through executive orders issued by their governors while Minnesota, Washington, Hawaii, New Jersey, and Oregon were some of the other states to pass laws with GHG emission reduction goals.⁴³ The state reduction levels varied somewhat, but none were drastically different than the levels adopted by other states earlier. Some states, such as New Jersey and Hawaii, included important provisions in their laws calling for the creation of program to implement and enforce the targeted reduction levels.⁴⁴

Though having GHG emission reduction targets in state law or decreed by Executive Order is an important step, the effectiveness of these goals would be minimal at best without any mechanisms in place to enforce them. Many of these laws and orders do not call for any such mechanisms, although some states have called for the creation of enforcement rules and programs in the near future. It is these states—namely New Jersey, Hawaii, and California—that we will discuss below.⁴⁵

1. California

Governor Arnold Schwarzenegger signed the Global Warming Solutions Act into law on September 27, 2006. In a press release describing the Act, it was touted as “California’s landmark bill that establishes a first-in-the-world comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases.”⁴⁶ The Act begins with the findings of the Legislature declaring their belief in global warming but also the gravity of the problem it poses: “Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.”⁴⁷ The findings go on to state California’s aspiration that its landmark Act will encourage the federal government and other countries around the world to take similar action.⁴⁸

The California Global Warming Solutions Act of 2006 first establishes a statewide GHG emissions cap for 2020 based on 1990 emissions.⁴⁹ In December 2007, the California Air Resource Board (“CARB”), pursuant to the Act, adopted four hundred

43. See States with GHG Targets, *supra* note 36.

44. See N.J. STAT. ANN. § 26:2C-41 (West 2007) (calling for “rules and regulations establishing a greenhouse gas emissions monitoring and reporting program to monitor and report Statewide greenhouse gas emissions” by January 1, 2009); HAW. REV. STAT. § 342B-72 (2007) (“Requiring the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this part, to become operative beginning on January 1, 2012”).

45. While other states may have enacted statutes that call for enforcement of GHG emission level targets, this author has found such legislation only in New Jersey, Hawaii, and California. Though other states may have similar legislation, no evidence of it was readily ascertainable. Furthermore, a discussion of the legislation in the aforementioned three states should be sufficiently thorough so that a general idea of state laws with enforcement mechanisms is made clear.

46. Press Release, Office of the Governor, Gov. Schwarzenegger Signs Landmark Legislation to Reduce Greenhouse Gas Emissions, <http://gov.ca.gov/index.php?/press-release/4111/> (last visited Feb. 3, 2008) [hereinafter CA Press Release].

47. CAL. HEALTH & SAFETY CODE § 38501(a) (West 2007). California should certainly be aware of the dangers of global warming given that, as of 2007, it was the 12th largest emitter of carbon in the world. CA Press Release, *supra* note 46.

48. CAL. HEALTH & SAFETY CODE § 38501(d) (West 2007).

49. CAL. HEALTH & SAFETY CODE § 38550 (West 2007). See also CA Press Release, *supra* note 46 (summarizing many of the main points of the California Global Warming Solutions Act).

and twenty-seven million metric tons of carbon dioxide as the GHG limit for 2020.⁵⁰ The Act also states that by January 1, 2008, CARB shall adopt regulations to require the reporting of statewide GHG emissions and to monitor and enforce compliance with the emissions levels.⁵¹ On December 6, 2007, CARB did adopt regulations for the mandatory reporting of GHG emissions from major stationary sources; however, the final draft of these regulations will not be unveiled until April 2008.⁵² Though the Act is flexible in allowing what CARB may include as part of the regulations, it does state that the regulations must, among other things, require the monitoring and annual reporting of GHG emissions (especially from major sources), account for GHG emissions from all electricity consumed in the state, ensure detailed reporting of GHG emissions from sources, and provide necessary tools to allow for the collection of the data reported.⁵³

CARB has not yet decreed the main provisions of the Global Warming Solutions Act. First, by January 1, 2009, CARB must formulate a plan that calls for emissions reductions from significant GHG sources through regulations, market mechanisms, and/or other actions.⁵⁴ Second, by January 1, 2011 CARB must adopt regulations “to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms.”⁵⁵ CARB is given a large amount of discretion in formulating these regulations, though it must consider several factors when doing so. The regulations must

- (1) be equitable, maximize benefit to all Californians, and encourage early emissions reductions,
- (2) not facilitate compliance that disproportionately affects low-income communities,
- (3) take into account voluntary reductions in emissions achieved prior to the implementation of the regulations,
- (4) complement federal and state air quality regulation,
- (5) be cost-effective,
- (6) consider overall benefit to society beyond just lowering of greenhouse gas emissions,
- (7) minimize administrative burden,
- (8) minimize leakage, and
- (9) take account of the relative contribution of different sources to statewide emissions of greenhouse gases.⁵⁶

50. California Environmental Protection Agency Air Resource Board, California Greenhouse Gas Emissions Inventory, <http://www.arb.ca.gov/cc/inventory/inventory.htm> (last visited Feb. 3, 2008).

51. CAL. HEALTH & SAFETY CODE § 38530(a) (West 2007).

52. California Environmental Protection Agency: Air Resource Board, Mandatory Greenhouse Gas Emissions Reporting, <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm> (last visited Mar. 30, 2008). However, the finalized regulations will not be known until after the final draft is unveiled by CARB: “Upon release of the revised regulation, ARB staff will invite all stakeholders to provide comments during a 15-day comment period.” *Id.*

53. CAL. HEALTH & SAFETY CODE § 38530(b) (West 2007).

54. CA Press Release, *supra* note 46.

55. *Id.* The Act defines “market mechanisms” as “either of the following: (1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases. (2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division.” CAL. HEALTH & SAFETY CODE § 38505(k) (West 2007).

56. Visick, *supra* note 23, at 260 (citing CAL. HEALTH & SAFETY CODE § 38562(b) (West 2007)). “Leakage” is defined as “a reduction in emissions of greenhouse gases within the state that is offset by an

Furthermore, if CARB does decide to adopt market-based mechanisms as part of its regulations, the Act imposes additional requirements on CARB, namely: (1) to consider the potential for direct and indirect emission impacts from the regulations, including localized impacts in communities already adversely impacted by air pollution, (2) to design the regulation to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, and (3) to maximize additional environmental and economic benefits for California.⁵⁷

While the effectiveness of California's Global Warming Solutions Act of 2006 is not yet known, it is a groundbreaking and promising piece of legislation. The strict deadlines set in the Act for the completion of establishing the GHG emissions levels and mandating reporting of GHG emissions have been met, suggesting that the future deadlines will also be met. Exactly what regulations are established to enforce the GHG emission levels remain to be seen, and will obviously be key to the success or failure of the Act. However, the importance of California's decision to place GHG emission levels into law, with strict deadlines and detailed guidelines in place to further the goal of making GHG emission reductions a reality, cannot be underestimated. A large government body had finally done more than state an idealistic "goal", and though California's aspiration of comprehensive federal legislation following in its footsteps has gone unfulfilled, other states have begun to follow California's lead.

2. Hawaii

On June 30, 2007, Hawaii Governor Linda Lingle signed the Global Warming Solutions Act of 2007 into law.⁵⁸ This law calls for a reduction of GHG emissions by 2020 to the levels they were at in 1990⁵⁹—the same reduction called for in the California Global Warming Solutions Act of 2006. Though this piece of legislation is much shorter than the California Global Warming Solutions Act, the Hawaii Global Warming Solutions Act does state that by December 31, 2011, rules shall be adopted

(1) Establishing greenhouse gas emission limits applicable to sources or categories of sources, to be achieved by January 1, 2020, and establishing emission reduction measures to achieve the maximum practically and technically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit; and (2) Requiring the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this part.⁶⁰

Finally, the Act calls for a schedule of fees to be paid by regulated sources of GHG

increase in emissions of greenhouse gases outside the state." *Id.* (quoting CAL. HEALTH & SAFETY CODE § 38505(j)) (West 2007)).

57. CAL. HEALTH & SAFETY CODE § 38570(b) (West 2007).

58. States with GHG Targets, *supra* note 36 (discussing Hawaii's Global Warming Solutions Act of 2007, HAW. REV. STAT. § 342B (2007)).

59. HAW. REV. STAT. § 342B-71.

60. *Id.* § 342B-72(a).

emissions to be deposited into the special clean air fund.⁶¹

The Hawaiian Global Warming Solutions Act, while a step in the right direction, quite evidently lacks the detail of its Californian counterpart, making it much more difficult to predict its possible success or failure. Nevertheless, like the California law, the Hawaiian Act does set specific deadlines for the accomplishment of its GHG emission reductions and does empower the government to set regulations and require reporting and monitoring in order to accomplish those reductions. While a more detailed law with an earlier deadline than 2011 might be preferred, Hawaii's law is still a step in the right direction.

3. New Jersey

On July 6, 2007, New Jersey Governor Jon S. Corzine signed the Global Warming Response Act into law.⁶² In discussing the law, Governor Corzine said:

In the absence of leadership on the federal level, the burden of reducing greenhouse gases has now fallen upon the states . . . I'm proud that New Jersey is one of the first among a handful of states that are leading the nation to combat global warming and I hope more states will follow in our model.⁶³

The New Jersey Legislature echoed the Governor's concern over the issue of global warming:

The Legislature finds and declares that internationally the issue of global warming has caused alarm, awareness, and action concerning climate changes occurring around the globe attributed to the high level of certain gases called "greenhouse gases" . . . [and] ultimately, if steps are not taken to reverse these trends, the effects on human, animal and plant life on Earth may be catastrophic.⁶⁴

This piece of legislation establishes target GHG emission levels for 2020 and 2050: a reduction of GHG emissions to 1990 levels by 2020 (approximately a twenty percent reduction) and an additional reduction to eighty percent below 2006 levels by 2050.⁶⁵ The Act goes on to declare that the Department of Environmental Protection shall, by January 1, 2009, adopt rules and regulations establishing a GHG monitoring and reporting program of statewide GHG emissions so as to reach the 2020 and 2050 goals.⁶⁶ Reporting of GHG emissions is required from: (1) Manufacturers and distributors of fossil fuels, (2) Any entity generating electricity in the state and any entity that generates electricity outside the State that is delivered for end use in the state,

61. HAW. REV. STAT. § 342B-73 (2007).

62. See generally N.J. STAT. ANN. §§ 26:2C-37–2C-44 (West 2007).

63. Press Release, NJ Global Warming, Governor Signs Global Warming Response Act (July 6, 2007), <http://www.state.nj.us/globalwarming/home/news/approved/070706.html> [hereinafter NJ Press Release].

64. N.J. STAT. ANN. § 26:2C-38 (West 2007).

65. *Id.* § 26:2C-40. These targets were already in existence in Executive Order 54, signed by Governor Corzine in February 2007, but this piece of legislation codified them into New Jersey law. See NJ Press Release, *supra* note 63.

66. N.J. STAT. ANN. § 26:2C-41(a–b) (West 2007).

(3) Any gas public utility, and (4) “[A]ny additional entities that are significant emitters of greenhouse gases, as determined by the [D]epartment, and as appropriate to enable the [D]epartment to monitor compliance with progress toward the 2020 limit and the 2050 limit.”⁶⁷ The Act goes on to state that no later than June 30, 2008, the Department shall prepare a report with specific recommendations for legislative and regulatory action necessary to reduce GHG emissions in order to achieve the 2020 limit.⁶⁸ Finally, the Act requires a biennial report be issued to the Governor and the Legislature (among others) on the status of the monitoring and reporting program.⁶⁹

The results and effectiveness of the New Jersey Global Warming Response Act remain to be seen. However, the language of the Act appears promising. The Act calls for drastic cuts in GHG emissions and lays out a specific plan of attack to achieve the cuts, including listing the sources to be covered under the monitoring and reporting program and laying out concrete dates by which certain acts are to be completed. Additionally, the Act is comprehensive, allowing the Department to report and monitor any significant GHG emitter. As compared to Hawaii and California, the New Jersey Act is much more similar to California with a detailed plan of attack to combat global warming. Though we will not know how successful the Act will be for another year or so at least, its all-inclusive reach and specificity point towards a cleaner future for New Jersey.

C. California GHG Emissions Standards for Vehicles

While the laws referenced *supra* all focused on stationary sources of GHG emissions, seventeen states have also adopted legislation aimed at cutting GHG emissions from mobile sources. Once again, California led the way in drafting and passing this innovative global warming legislation. In July 2002, Governor Schwarzenegger signed Assembly Bill 1493 into law, which declared that “[n]o later than January 1, 2005, the state board [CARB] shall develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles.”⁷⁰ Notice that the law calls for regulations that are feasible and cost-effective.⁷¹ This was reflected in the regulations CARB issued in September 2004

67. *Id.* § 26:2C-41(c).

68. *Id.* § 26:2C-42(b).

69. *Id.* § 26:2C-43(a).

70. CAL. HEALTH & SAFETY CODE § 43018.5(a) (West 2007).

71. § 43018.5(c) Specifically, the statute requires:

In developing the regulations described in subdivision (a), the state board shall do all of the following:

- (1) Consider the technological feasibility of the regulations.
- (2) Consider the impact the regulations may have on the economy of the state, including, but not limited to, all of the following areas:
 - (A) The creation of jobs within the state.
 - (B) The creation of new businesses or the elimination of existing businesses within the state.
 - (C) The expansion of businesses currently doing business within the state.
 - (D) The ability of businesses in the state to compete with businesses in other states.
 - (E) The ability of the state to maintain and attract businesses in communities with the most significant exposure to air contaminants, localized air contaminants, or both,

that included detailed analysis of the technological and economic feasibility of the proposed regulations that are to apply to new vehicles sold in California starting in 2009.⁷²

The regulations are broken down into two phases: (1) from 2009–2012, an approximately twenty-two percent reduction of GHG emissions, and (2) from 2013–2016, an approximately thirty percent reduction of GHG emissions.⁷³ CARB then proposes several technologies that may be helpful in achieving “significant reductions in emissions at favorable costs.”⁷⁴ CARB also lays out the cost to the consumer, explaining that even though cars and large trucks will be \$17 and \$36 more expensive (respectively) in 2009 and \$1064 and \$1029 more expensive (respectively) in 2016 due to the technological modifications required in cars, the consumer will actually save money in the long run due to decreased operating cost (i.e. using less fuel).⁷⁵ CARB further addresses the positive impact on California’s economy due to this decreased operating cost; this newly available money will be used on other goods and services, thereby helping California’s economy and creating more jobs.⁷⁶

California’s legislation attacking GHG emissions is an ambitious effort to curtail a major source of global warming. In fact, scientists estimate that one-third of all GHG in the United States come from vehicle emissions, and in California that number rises to forty-one percent.⁷⁷ And once again, as with the California Global Warming Solutions Act of 2006, states have followed California’s lead. To date, sixteen other states have adopted or are poised to adopt California’s vehicle GHG emissions regulations: Arizona, Colorado, Connecticut, Florida, Massachusetts, Maryland, Maine, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, and Washington.⁷⁸ Additionally, this legislation is very thorough in its analysis to ensure the economic feasibility of its regulations. With such well-crafted laws ready to be adopted in so many states, it would appear that this legislation is ready for success.

However, there are many hurdles that Assembly Bill 1493 must still clear. Perhaps the biggest hurdle is that California is still awaiting EPA approval for a waiver from the provisions of the Clean Air Act (“CAA”). This waiver is required in order for

including, but not limited to, communities with minority populations or low-income populations, or both.

(F) The automobile workers and affiliated businesses in the state.

Id.

72. See generally CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD, FACT SHEET (2004), http://arb.ca.gov/cc/factsheets/cc_newfs.pdf.

73. *Id.*

74. *Id.* (“These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant”).

75. *Id.*

76. See CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD, *supra* note 72.

77. Michael W. Wall, *Regional Greenhouse Gas Initiative and California Assembly Bill 1493: Filling the American Greenhouse Gas Regulation Void*, 41 U. RICH. L. REV. 567, 576 n.53 (2007) (citing Union of Concerned Scientists, California Regulates Global Warming Emissions from Motor Vehicles, http://www.ucsusa.org/clean_vehicles/vehicles_health/californias-global-warming-vehicle-law.html (last visited Feb. 17, 2008)).

78. Pew Center on Climate Change, States Poised to Adopt California Vehicle GHG Standards, http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm (last visited Feb. 17, 2008).

California (and any other state adopting California's regulations) to regulate vehicle emissions independently.⁷⁹ When Congress passed the CAA in 1970, it prohibited states from "adopt[ing] or attempt[ing] to enforce any standard relating to the control of emissions from... new motor vehicle engines."⁸⁰ However, any state that had regulated automobile emissions prior to 1966 received a waiver from the application of this provision.⁸¹ California, the only state to meet this threshold, having regulated vehicle emissions since the early 1960s, was therefore free from the constraints of this provision of the CAA.⁸² Additionally, any other state may adopt California's emissions standards so long as they adopt California's exact standards that have been granted a waiver.⁸³ However, in December 2007 the EPA denied California the waiver it sought.⁸⁴ In explaining the EPA's decision, Stephen Johnson, the administrator of the EPA, stated, "The Bush administration is moving forward with a clear national solution—not a confusing patchwork of state rules . . . I believe this is a better approach than if individual states were to act alone."⁸⁵ California has responded by appealing the EPA's decision in the Ninth Circuit Court of Appeals.⁸⁶

Not surprisingly, there have also been attacks on these regulations by car companies who were not too excited to incur the costs of using new technology. In *Central Valley Chrysler-Jeep, Inc. v. Witherspoon*, the United States District Court for the Eastern District of California ruled in favor of the car companies.⁸⁷ Since there had been no waiver issued by the EPA (and there is none today), the Court ruled that California's laws were preempted by the CAA.⁸⁸ Therefore, California was enjoined from enforcing its Assembly Bill 1493.⁸⁹ The Court then stayed further proceedings pending the outcome of *Massachusetts v. EPA* in the Supreme Court.⁹⁰ That case was subsequently decided in April 2007, and a discussion of the enormous impact it appears to have on global warming legislation will follow below. However, for now, it is important to note that even after *Massachusetts v. EPA* gave the EPA the authority to regulate vehicle emissions, the EPA still denied California's waiver request (as discussed *supra*).

So where does this leave California's attempt to regulate vehicle emissions? Right now, it would appear to be in a state of limbo. These regulations have been drafted and are ready to take effect in seventeen states, but unless the EPA grants a waiver from the CAA, it would seem that these regulations will not be followed. Nevertheless, this attempt by California was indeed a valiant effort, and an important stepping stone on

79. Wall, *supra* note 77, at 577.

80. *Id.* (quoting Clean Air Act § 209d(a), 42 U.S.C. § 7543(a) (2000)).

81. *Id.* (citing Clean Air Act § 209(b)(1), 42 U.S.C. § 7543(b)(1) (2000)).

82. *Id.* at 577–78.

83. *Id.* at 578 (citing Clean Air Act § 177, 42 U.S.C. § 7507 (2000)).

84. Micheline Maynard, E.P.A. Denies California Emission's Waiver, N.Y. TIMES, Dec. 19, 2007, <http://www.nytimes.com/2007/12/19/washington/20epa-web.html>.

85. *Id.*

86. Petition for Review, *California v. EPA* (9th Cir. filed Jan. 2, 2008), available at http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf [hereinafter Petition for Review].

87. No. CV F 04-6663 AWI LJO, 2007 WL 135688 (E.D. Cal. Jan. 16, 2007).

88. *Id.* at *15.

89. *Id.*

90. *Id.*

the path towards comprehensive global warming legislation.

D. Lawsuits by States

In addition to passing legislation to try to curb global warming due to GHG emissions, states have also taken their efforts to the courts. There is a large amount of litigation in the United States regarding climate change.⁹¹ However, for purposes of this paper, the focus will be on climate change litigation initiated by states to further the goal of reducing GHG emissions. California has petitioned the EPA three times in the recent past: in 2008 California petitioned the Ninth Circuit for review of the EPA's denial of California's waiver request from CAA provisions,⁹² and twice California petitioned the EPA directly, once in 2007 to regulate GHG emissions from ocean going vessels in U.S. waters and once in 2008 to regulate GHG emissions from construction and industrial equipment.⁹³ The State of New York also successfully sued the EPA on its claim that the EPA's Equipment Replacement Provision ("ERP"), which provided ways for stationary sources of air pollution to avoid triggering New Source Review despite modifying their facilities,⁹⁴ violated the CAA. The court found the ERP violated section 111(a)(4) of the CAA because, though the modifications were not costly or major, they did result in increases of emissions and were therefore within the statutory definition of "any . . . modification."⁹⁵ States, as can be seen, have been active in seeking to limit emissions by going to court. However, one case stands above the rest as the most important and influential court decision about regulating GHG emissions, and a state just happens to be at the center of it: *Massachusetts v. EPA*.⁹⁶

A brief background to the case is necessary. On September 8, 2003, in response to a rulemaking petition by private organizations, the EPA found that the CAA does not authorize the EPA to issue mandatory regulations to address global climate change.⁹⁷ The EPA went on to say that even if it had the authority, it would be unwise to issue regulations on global warming at this time because the EPA found that Congress did not intend for such regulations to be adopted (as they had never enacted a specific regulatory scheme about global warming,) and that there was still scientific uncertainty over whether human activities were really leading to global warming.⁹⁸ Massachusetts and the other petitioners sued the EPA, asking the Supreme Court "whether EPA has the statutory authority to regulate greenhouse gas emissions from new motor vehicles; and if so, whether its stated reasons for refusing to do so are consistent with the

91. See MICHAEL B. GERRARD AND J. CULLEN HOWE, CLIMATE CHANGE LITIGATION IN THE U.S. (2008), <http://www.climatecasechart.com/> (providing a chart of recent climate change litigation in the United States, organized by topic, with links to each case).

92. Petition for Review, *supra* note 86.

93. MICHAEL B. GERRARD AND J. CULLEN HOWE, CLIMATE CHANGE LITIGATION IN THE U.S. → STATUTORY CLAIMS → FORCE GOVERNMENT TO ACT → CLEAN AIR ACT (2008) (on file with author) (providing a summary of actions taken by states and private individuals and groups seeking to make the Federal Government take action under the CAA).

94. *New York v. EPA*, 443 F.3d 880, 883 (C.A.D.C. 2006).

95. *Id.* at 890.

96. *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

97. Michael B. Gerrard, U.S. Supreme Court decides *Massachusetts v. EPA*, AMERICAN BAR ASSOCIATION, April 11, 2007, available at <http://www.abanet.org/abapubs/globalclimate/>.

98. *Id.*

statute.”⁹⁹

On April 2, 2007, the Supreme Court issued its decision. In the majority opinion written by Justice Stevens, the Court first decided that Massachusetts had standing to bring this suit.¹⁰⁰ The Court then proceeded to ask “whether § 202(a)(1) of the Clean Air Act authorizes EPA to regulate greenhouse gas emissions from new motor vehicles in the event that it forms a ‘judgment’ that such emissions contribute to climate change,” and “[had] little trouble concluding that it does.”¹⁰¹ The Court had such little trouble reaching this conclusion due to the fact that the EPA has the authority to regulate all air pollutants, and GHG emission fall within the sweeping definition of “air pollutant” under the CAA, which “embraces all airborne compounds of whatever stripe.”¹⁰² The Court also rejected the EPA’s argument that it was unwise to regulate GHG emissions now. The Court stated:

Under the clear terms of the Clean Air Act, EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.¹⁰³

However, the Court found that the “EPA has offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change.”¹⁰⁴ The Court therefore held that the EPA’s actions were arbitrary and capricious, and remanded the case to the EPA to make an “endangerment finding” with respect to greenhouse gases.¹⁰⁵

With the matter back in the EPA’s hands, there are two options. First, if the EPA finds no endangerment, more litigation will probably follow. Second, if the EPA does find endangerment, the EPA would most likely promulgate national ambient air quality standards based on adverse impacts on human health or welfare.¹⁰⁶ However, the Court never addressed how the EPA is to make its endangerment finding (i.e. whether policy concerns can influence the finding) or set a deadline for when the finding must be made.¹⁰⁷

Even though the EPA has not made its finding yet, the fact that the Supreme Court ruled that the EPA has the authority to regulate GHG vehicle emissions is still very significant. Once again, the states are pushing the federal government to take action. While it is not certain if the EPA will issue regulations on vehicle emissions, there is at least a rebuttable presumption in favor of regulating once the agency makes a finding of endangerment because the CAA requires that the EPA regulate the dangerous pollutant

99. Massachusetts, 127 S. Ct. at 1446.

100. *Id.* at 1458.

101. *Id.* at 1459.

102. Gerrard, *supra* note 97 (quoting Massachusetts, 127 S. Ct. at 1460–62).

103. Massachusetts, 127 S. Ct. at 1462.

104. *Id.* at 1463.

105. Gerrard, *supra* note 97.

106. *Id.*

107. *Id.*

(here vehicle GHG emissions) unless it offers a reasoned explanation why it will not.¹⁰⁸ However, the fallout from *Massachusetts v. EPA* is not all good news. As was discussed earlier, the outcome in the case did not help California get its CAA waiver from the EPA for California's own GHG vehicle emissions law. Additionally, in *California v. General Motors Corp.*, the State of California's case against various automakers for creating and contributing to the alleged public nuisance of global warming, was dismissed just months after *Massachusetts v. EPA*.¹⁰⁹ Nevertheless, *Massachusetts v. EPA* shows great promise. The states have pushed the federal government to enact federal legislation on global warming, and now the Supreme Court has joined their effort.

E. State Action Plans

Many states, even if they do not have legislation on GHG or have not filed suits regarding GHG emissions, do have other programs in place related to GHG emissions. For example, twenty-two states have active climate legislative committees or executive branch advisory committees on climate change.¹¹⁰ Most states—in fact all but seven—have performed GHG Inventories to estimate the total GHG emissions level from all sectors in the state.¹¹¹ Many of these same states also have a voluntary, mandatory, or market-based-incentivized GHG Reporting or Registry system.¹¹²

Many of these measures are addressed in statewide Climate Action Plans. As of September 2007, twenty-nine states have adopted such plans with an additional seven actively drafting a plan.¹¹³ These plans detail steps that the given state can take to reduce their contribution to climate change by identifying cost-effective opportunities to reduce GHG emissions.¹¹⁴ Although these plans are each individualized as to their own state, many states do look for input from outside sources in constructing their plans. For example, the Center for Climate Strategies (“CCS”), “a nonprofit service

108. *Massachusetts*, 127 S. Ct. at 1462–63.

109. *California v. Gen. Motors Corp.*, No. C06-05755 MJJ, 2007 WL 2726871 at *1–17 (N.D. Cal. Sept. 17, 2007).

110. Pew Center on Global Climate Change, States with Active Climate Legislative Commissions and Executive Branch Advisory Groups, http://www.pewclimate.org/what_s_being_done/in_the_states/climatecomissions.cfm (last visited Feb. 24, 2008). As of January 2008, these states are: Alaska, Arkansas, Arizona, California, Connecticut, Florida, Iowa, Illinois, Maryland, Minnesota, Montana, North Carolina, New Mexico, Nevada, New York, Oregon, South Carolina, Utah, Virginia, Vermont, Washington, and Wisconsin. *Id.*

111. Pew Center on Global Climate Change, States with Greenhouse Gas Inventories, http://www.pewclimate.org/what_s_being_done/in_the_states/inventories_map.cfm (last visited Feb. 24, 2008). As of May 2007, the seven states yet to perform inventories are: Alaska, Arkansas, Nebraska, North Dakota, South Carolina, South Dakota, and Wyoming. *Id.*

112. Pew Center on Global Climate Change, States with GHG Reporting & Registries, http://www.pewclimate.org/what_s_being_done/in_the_states/reporting_map.cfm (last visited Feb. 23, 2008). As of July 2007, all but 9 states have some form of reporting system of registry: Alaska, Arkansas, Indiana, Kentucky, Louisiana, Mississippi, Nebraska, North Dakota, and South Dakota. *Id.*

113. States with Climate Action Plans, *supra* note 5. The states with plans (either completed or completed but undergoing revisions) are: Alabama, Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Iowa, Kentucky, Massachusetts, Maryland, Maine, Minnesota, Missouri, Montana, North Carolina, New Hampshire, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, and Washington. *Id.* The states composing a plan are: Alaska, Arkansas, Florida, Idaho, Nevada, South Carolina, and Wisconsin. *Id.*

114. *Id.*

organization that works directly with public officials and their stakeholders to identify, design, and implement policies that address climate mitigation, clean energy, and economic development opportunities,” has provided ten states with their own comprehensive climate action plans and is working with seventeen more states to do the same.¹¹⁵ The CCS puts together a “portfolio” of actions in all sectors of the states that contribute to GHG emissions and then proposes measures to limit such emissions, such as “codes and standards; market-based systems; funding assistance; and other methods.”¹¹⁶ The final policy solutions fall into one of the following five categories: (1) Energy Efficiency and Conservation, (2) Clean, Advanced, and Renewable Energy, (3) Transportation and Land Use Efficiency, (4) Agriculture and Forestry, and (5) Waste Management, Industrial Processes, and Other Sources.¹¹⁷ While states do not have to adopt these plans verbatim or at all, they do provide an informed analysis a state can consider in making its own.

State Action Plans are important steps taken by states that show that states are not only aware of and concerned about global warming, but willing to make a comprehensive plan in order to try to help curtail global warming by encouraging the reduction of GHG emissions. At the same time, however, they are still merely “plans”. Lacking the ability to mandate GHG emissions reductions, reduction targets, “or other clear policies, climate action plans will not achieve real reductions in GHG emissions.”¹¹⁸

F. Regional Approaches

States have also entered into agreements with each other and with foreign countries to try and address the growing problem of climate change. One of the first of these agreements was reached at the Conference of New England Governors and Eastern Canadian Premiers (“NEG-ECP”) in 2001.¹¹⁹ The members of the Conference—the governors of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, and the premiers of New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Quebec¹²⁰—adopted the Climate Change Action Plan, a “a comprehensive and coordinated regional plan for reducing greenhouse gases that includes a goal of achieving 1990 emission levels by 2010 and ten percent below 1990 levels by 2020 with a long-term goal of reducing emissions by seventy-five to

115. The Center for Climate Strategies, What’s Happening: U.S. Climate Policy Action, <http://www.climatestrategies.us/> (last visited Feb. 24, 2008). The states with completed plans from the CCS are: Arizona, California, Connecticut, Massachusetts, Maine, New Jersey, New Mexico, New York, Oregon, and Rhode Island. *Id.* The seventeen states for which CCS is currently drafting plans are: Alaska, Arkansas, Colorado, Delaware, Florida, Hawaii, Idaho, Illinois, Iowa, Maryland, Michigan, Minnesota, Montana, North Carolina, South Carolina, Utah, Vermont, Washington, and Wisconsin. *Id.*

116. The Center for Climate Strategies, State Policy Solutions that Work, http://www.climatestrategies.us/Policies_That_Work.cfm (last visited Feb. 24, 2008).

117. *Id.*

118. States with Climate Action Plans, *supra* note 5.

119. The Pew Center for Climate Change, Regional Initiatives, http://www.pewclimate.org/what_s_being_done/in_the_states/regional_initiatives.cfm (last visited Feb. 24, 2008) [hereinafter Pew Center, Regional Initiatives].

120. See The New England Governors’ Conference, Inc., NEG/ECP Members, <http://www.negc.org/negecpmembers.html> (last visited Feb. 24, 2008).

eighty-five percent.”¹²¹ The Plan is also a voluntary agreement that encourages the members to adopt measures to curtail GHG emissions to reach these goals.¹²² Among the recommendations laid out in the Plan are: to establish a regional GHG emissions inventory, that each member make their own plan consistent with the Climate Change Action Plan, to call for the public sector to reduce GHGs by twenty-five percent by 2012, to call for the electricity sector to reduce GHGs by twenty percent by 2025, and to look into possible market-based emission programs in the future.¹²³

One of the most important of these regional initiatives is the Regional Greenhouse Gas Initiative (“RGGI”). On December 20, 2005, the governors of seven Northeastern states—Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont (joined later in 2005 by Maryland and Massachusetts)—announced the creation of the RGGI and implemented the first mandatory cap-and-trade program for carbon dioxide emissions in the United States.¹²⁴ This program is directed at power plants, capping emissions of carbon dioxide at current levels in 2009 and then reducing emissions ten percent by 2019.¹²⁵ Each state receives a share of allowances relative to its emissions output that it may then distribute to emitters. If companies have excess allowances, they may sell or trade them to power plants that do not have enough credits to cover their emissions, thus creating an economic incentive to develop carbon dioxide reduction technology so as to reduce the need to obtain allowances and gain the profit by selling them instead.¹²⁶ This cap-and-trade program is very flexible in allowing plants to meet their allowances in different ways, such as rewarding plants with allowances if they encourage energy efficiency, capture and dispose of methane released from landfills, or reforest property.¹²⁷

California Governor Arnold Schwarzenegger and British Prime Minister Tony Blair signed a landmark agreement in July 2006.¹²⁸ The agreement states that both parties will: (1) Evaluate and implement market-based mechanisms that spur innovation, including that the United Kingdom share with California the best practices and lessons learned on emissions trading from Europe; (2) Better understand the economics of climate change; (3) Collaborate on researching new technology; and (4) Enhance linkages between the scientific communities of the United Kingdom and California.¹²⁹

In February 2007, the governors of Arizona, California, New Mexico, Oregon, and

121. McKinstry, *supra* note 10, at 32.

122. The Center for Climate Strategies, Regional Initiatives, http://www.climatestrategies.us/Regional_Initiatives.cfm (last visited Feb. 24, 2008) [hereinafter CCS, Regional Initiatives].

123. McKinstry, *supra* note 10, at 33–34.

124. Pew Center, Regional Initiatives, *supra* note 119. Pennsylvania and the District of Columbia have also joined as observers. *Id.*

125. *Id.* See also Regional Greenhouse Gas Initiative, CO2 Budget Trading Program, <http://www.rggi.org/> (last visited Feb. 24, 2008).

126. Wall, *supra* note 77, at 570–71.

127. *Id.* at 572–73.

128. Press Release, Office of the Governor, Gov. Schwarzenegger, British Prime Minister Tony Blair Sign Historic Agreement to Collaborate on Climate Change, Clean Energy (July 31, 2006), <http://gov.ca.gov/index.php/press-release/2770/>.

129. *Id.*

Washington formed the Western Climate Initiative ("WCI").¹³⁰ Since then, Utah and Montana have joined, along with the Canadian provinces of British Columbia and Manitoba.¹³¹ Members of the WCI set a regional emissions target of fifteen percent below 2005 levels by 2020 and promise to establish, by August 2008, a market-based system (such as a cap-and-trade program like the RGGI) to aid in meeting the target.¹³²

In November 2007, several Midwestern states entered into an accord very similar to the WCI. The Governors of Illinois, Iowa, Kansas, Michigan, Minnesota, and Wisconsin, as well as the Premier of Manitoba signed the Midwestern Regional Greenhouse Gas Reduction Accord.¹³³ The Accord will establish greenhouse gas reduction targets, develop multi-sector cap-and-trade system to help achieve those targets, establish a system to enable tracking and crediting for entities that reduce GHG emissions, and "implement additional steps as needed to achieve the reduction targets, such as a low-carbon fuel standards and regional incentives and funding mechanisms."¹³⁴ The Accord is to be fully implemented within thirty months.¹³⁵

In the interest of time, not every regional initiative has been covered.¹³⁶ Instead, by focusing on some of the larger ones from different regions across the country, a fairly representative sample provides for a good overview of these agreements. From this cross-section of agreements, it is easy to see their importance. Even though the voluntary agreements like the NEG-ECP lack any substantive enforcement capabilities, it is promising that there are numerous states that feel the need to come together to try to curtail global warming. Similarly, California's agreement with the United Kingdom, even though it does little more than open lines of communication between the members of the agreement, shows that states are no longer going to wait for federal action and are anxious to learn of new ways to stop global warming. Yet compared to the other regional compacts, perhaps the RGGI (and maybe the WCI and the Midwestern Regional Greenhouse Gas Reduction Accord in the near future) stands out as a landmark moment in state action against global warming. The implementation of a cap-and-trade system provides a different approach to reducing GHG emissions than simply dictating that reductions be made and then monitoring to make sure they are accomplished. The cap-and-trade approach allows for compliance with the reductions

130. Pew Center, Regional Initiatives, *supra* note 119. "The WCI builds on work already undertaken individually by the participating states and provinces, as well as two existing regional agreements . . . the Southwest Climate Change Initiative of 2006, which includes Arizona and New Mexico, and the West Coast Governors' Global Warming Initiative of 2003, which includes California, Oregon, and Washington." *Id.* See also The Western Climate Initiative, <http://www.westernclimateinitiative.org/> (last visited Feb. 24, 2008).

131. Pew Center, Regional Initiatives, *supra* note 119. Idaho, Wyoming, Colorado, Nevada, and Alaska are also observers of the WCI. *Id.*

132. *Id.*

133. *Id.*

134. Press Release, Midwestern Governors Association, Governors Sign Energy Security and Climate Stewardship Platform and Greenhouse Gas Accord, <http://www.midwesterngovernors.org/govenergynov.htm> (last visited Feb. 24, 2008). Indiana, Ohio, and South Dakota joined the agreement as observers to participate in the cap-and-trade system. Pew Center, Regional Initiatives, *supra* note 119.

135. Pew Center, Regional Initiatives, *supra* note 119.

136. See *id.* (describing the Energy Security and Climate Stewardship Platform for the Midwest, Western Governors' Association: Clean and Diversified Energy Initiative, Western Governors' Association, Powering the Plains, and the Southwest Climate Change Initiative). See also CCS, Regional Initiatives, *supra* note 122 (describing the Western Regional Air Partnership).

at a lower overall cost, as the plants are encouraged to reduce GHG emissions so they can sell their surplus allowances and make money. No longer is the fear of “getting caught” with excess GHG emissions solely responsible for compliance. The use of this economic incentive as a means of regulating GHG has great promise in helping to bring about a cleaner future for states.

III. CONCLUSION: SUCCESS BY THE STATES AND PROPOSED FEDERAL LEGISLATION

Having now toured state action taken to combat global warming due to GHG emissions, the next logical question is: how successful have these measures been? As has been stated throughout, it is too early to tell with any scientific certainty how successful any of these actions has been because, since most are a year or so old or a year or two away from taking full effect, there is little to no data available to give a definitive answer. What can be said for these state actions, however, is that they are a great success in actively targeting stationary and mobile sources of GHG emissions with a variety of different measures: setting target emission levels, creating action plans, taking federal agencies to court to do the same, and joining together with other states to tackle the problem on a regional level.

Given this (hopefully) successful action at the state level in reducing GHG, is federal action really necessary? Although one could debate this question in much greater depth, the short answer seems to be yes. While all of the varied state action has been wonderful, there remain many states that have done almost nothing to combat global warming, including some of the larger states like Texas.¹³⁷ Since the United States is an industrialized leader emitting an extraordinary amount of GHG (and many individual states producing more GHG than entire countries),¹³⁸ every state in the United States must, for the benefit of Americans and everyone in the world, adopt measures to limit GHG emissions. Therefore, some federal action is necessary to require every state to reduce GHG emissions. One question, then, is left: what should the federal government do?

Looking back through the state actions taken to combat global warming due to GHG emissions, a promising piece of federal legislation emerges. The need for the federal government to pass legislation, as opposed to implementing a climate action plan or a target, is obvious. Many emitters of GHG will simply not follow voluntary regulations. When drafting the federal legislation, the government should also take into account economic and technological feasibility like the California Assembly Bill 1493 regarding vehicle emissions does. Not only does this ensure that the legislation’s goals are actually achievable, but it also will probably help persuade many lobbying against such legislation that the law would not bankrupt them. Just as Assembly Bill 1493 did, including a list of technologies available and breaking down increased costs and net savings will make compliance easier and (perhaps) more willing if GHG emission sources see that either they or the people of America at large will benefit economically by reducing GHG. Additionally, like the California Global Warming Solutions Act of

137. See *supra* Part I.

138. Peterson, *supra* note 26, at 119 (providing a chart of carbon dioxide emissions in 1999 and 2000, with the United States far and away first with 1528 mega-metric tons of CO₂ emissions, China second with 761, Texas seventh, and California fifteenth, beating out many other entire countries).

2006, federal legislation must also emphasize the need for the law to be just, in that it must be equitable and maximize benefit to all while not disproportionately affecting low-income communities. The legislation should also more closely reflect that passed in New Jersey and California (as opposed to Hawaii,) setting specific targets backed with concrete regulations to enforce compliance and requiring monitoring of and reporting by those regulated to provide feedback for revisions of the legislation to ensure optimal results. This proposed legislation, composed of many characteristics of action taken in the states, deserves a piece-by-piece analysis to be fully understood.

First, the federal legislation must set a realistic target, but one that also pushes GHG emitters to take serious action to reduce their emissions. The target set in the Kyoto Protocol is not practical for the United States, as there are now only four years (instead of fourteen, as there were in 1998 when President Clinton signed it) to reach the Protocol's goal in 2012. Instead, more like the laws in California, Hawaii, and New Jersey, a short-term goal of returning to 1990-levels by 2020 and a long-term goal of an even greater reduction of those 1990 levels (perhaps as aggressive as that set in New Jersey, an eighty percent reduction) by 2050. This would give time to develop new technology, new programs to use new fuels, or other ways to prevent the emissions of GHG.

Second, the legislation must specify who should be regulated. Perhaps requirements could be similar to those of New Jersey's Global Warming Response Act, which covers manufacturers of fossil fuels, electricity, gas, and all other significant sources of GHG, an adequate list covering many stationary sources. Additionally, the federal legislation should not overlook mobile sources of GHG emissions as they are a large contributor of GHG. Perhaps, like Assembly Bill 1493, two phases of reductions of GHG emissions from cars should be undertaken: a twenty percent reduction over several years, followed by an additional thirty percent reduction over the next several years.

Third, the legislation must specify how it is going to regulate and enforce compliance with its requirements. Following the RGGI, federal legislation should use a cap-and-trade system to implement its requirements. Emitters of GHG (stationary and mobile) would be awarded GHG emissions allowances. (How they will be distributed across different sectors of the economy is a question for a different day and a different author). Then, under this system, GHG emitters will try to lower their GHG emissions to levels lower than those required by federal law so they can sell excess GHG emissions allowances, either to those who are polluting in excess, or perhaps back to the federal government (which could then re-sell them or keep them). Additionally, the federal legislation should incorporate extra procedures whereby GHG emitters are awarded more allowances to use or sell in exchange for other measures taken to curtail global warming, such as reforestation, increasing energy efficiency (beyond the emitter's own factory), etc. This system, besides encouraging sources to reduce their emissions below mandated levels, also allows for compliance at low cost. This reduced cost is due to the fact that, in addition to the federal government providing incentive to comply with the law by monitoring sources and issuing penalties for violations (perhaps monetary penalties which can be used for the measures to curtail global warming discussed *supra*), sources have additional incentive to comply so that they may make a

profit by selling their excess GHG allowances.

While this comprehensive federal legislation seems promising, it should be drafted so that states or groups of states are still free to implement stricter GHG emission reduction programs. For example, should a state or region decide to create its own cap-and-trade system calling for even greater reduction of GHG from vehicles, that should be allowed. Any GHG emitters in states or regions not in a separate pact to reduce more than the federal minimum would, of course, still be subject to the federal legislation and part of the nationwide cap-and-trade program. However, the federal government should encourage states and regions to create even greater reductions than the federal minimum, perhaps by awarding grants to those states or regions to use as they please (whether or not related to GHG emission reduction) or some other incentive. States that demand greater GHG reductions would then push GHG emitters to develop new ways to reduce their emissions, which could then be shared across the nation (much like the agreement between California and the United Kingdom calling for increased communications on GHG reduction methods) and perhaps encourage other states or regions to pass legislation to reduce GHG more than the federal legislation requires, knowing that there now exist methods to achieve such a reduction.

Fourth, and finally, the legislation must decide who is to enforce the regulations imposed by this new legislation. The EPA seems to be the natural fit. However, because this legislation would establish a new nationwide program of global importance with aggressive GHG targets, perhaps a new federal agency would best suit the job. Such an agency would have to monitor region, state, and even individual emitter levels of GHG from throughout the country. Based on their monitoring and reports sent to them by emitters, this agency would also have the important and difficult job of not only ensuring compliance with the cap-and-trade system mentioned *supra*, but also revising the legislation and its requirements as need be in order to achieve the best results.

If Congress does not pass this proposed federal legislation, perhaps the EPA could issue binding regulations with similar effects. *Massachusetts v. EPA*, even though it deals with vehicle GHG emissions, required the EPA to make such regulations unless it finds that GHG emissions do not contribute to climate change, suggesting that other suits may follow that may force the EPA's hand to regulate GHG emissions from all sources unless it finds they do not contribute to climate change either.

Regardless of whether Congress or the EPA takes action, we have established how such action can and should be crafted. Based on state action, specific GHG targets for stationary and mobile emitters implemented through a cap-and-trade system enforced by the EPA or a new federal agency give America the best prospect to lower its GHG emissions. However, just as action in the states is greatly aided by the support of the governor (such as Governor Schwarzenegger in California), the support of the President of the United States would go a long way towards the implementation of any federal action reducing GHG emissions. With a Presidential election looming, perhaps such Presidential support will soon arrive in the White House.